

We Claim:

1. A combination, comprising:  
a product container having a longitudinal dimension and a valve oriented to  
5 discharge product generally longitudinally therefrom;  
valve actuating apparatus extending laterally from the valve in a direction  
transverse to the longitudinal dimension and terminating at an outer peripheral surface;  
and  
a housing having a wall that tapers to a discharge opening wherein the discharge  
10 opening has a size larger than a radius of the container but smaller than the greatest lateral  
extent of the valve actuating apparatus such that the outer peripheral surface is disposed in  
interfering relationship with the wall when the container is disposed in the housing.
2. The combination of claim 1, wherein the valve includes a valve stem and  
15 wherein the valve actuating apparatus comprises an arm disposed in interacting relation  
with the valve stem.
3. The combination of claim 1, wherein the valve actuating apparatus  
comprises an arm disposed in interacting relation with a tube that is inserted into a female  
20 valve of the container.
4. The combination of claim 1, wherein the valve actuating apparatus is  
separable from the container.
- 25 5. The combination of claim 1, wherein valve actuating apparatus is  
permanently secured in fixed relation to the container.
6. The combination of claim 1, wherein container includes a valve stem and  
wherein the valve actuating apparatus is integral with the valve stem.  
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7. The combination of claim 1, wherein the valve actuating apparatus has a length between a center of the valve and the outer peripheral surface and wherein the length is greater than one-half of the radius of the container.

5 8. The combination of claim 7, wherein the length is between about 18 mm and about 33 mm.

9. The combination of claim 7, wherein the length is about 25 mm.

10 10. The combination of claim 1, wherein the wall tapers from a first cross sectional size of about 66 mm to a second cross sectional size of about 34 mm.

11. The combination of claim 10, wherein relative movement of the container and the housing along the longitudinal dimension causes the outer peripheral surface to  
15 contact a surface of the wall, thereby displacing the valve actuating apparatus.

12. The combination of claim 11, wherein that portion of the surface of the wall that is contacted by the outer peripheral surface lies between the locations of the first cross sectional size and the second cross sectional size.

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13. The combination of claim 11, wherein the relative movement is undertaken by moving the housing relative to the container.

14. The combination of claim 11, wherein the relative movement is undertaken  
25 by moving the container relative to the housing.

15. The combination of claim 2, wherein the valve actuating apparatus further includes one or more additional arms terminating at circumferentially separated outer peripheral surfaces.

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16. The combination of claim 1, further comprising an extension arm connected to the housing and having a trigger wherein pulling the trigger advances the container toward the discharge opening.

5 17. The combination of claim 1, wherein the valve actuating apparatus comprises a disc.

18. The combination of claim 1, wherein the valve actuating apparatus is incorporated in an actuator cap fitted to the container.

19. An actuator cap, comprising:  
a main wall that extends generally along an axial dimension thereof and has a  
varying cross sectional size; and

5 an actuator member extending transversely to the axial dimension and ending in an  
outer peripheral surface wherein the outer peripheral surface extends laterally beyond a  
portion of the main wall but does not extend beyond a greatest lateral extent of the main  
wall.

20. The actuator cap of claim 19 in combination with a container, wherein the  
10 container has a maximum radial dimension and wherein the outer peripheral surface does  
not extend outwardly beyond the maximum radial dimension.

21. The actuator cap of claim 19 in combination with a container, wherein the  
actuator member has a length between a center of the actuator cap and the outer peripheral  
15 surface greater than one-half of a radius of the container.

22. The actuator cap of claim 21, wherein the length is between about 18 mm  
and about 33 mm.

20 23. The actuator cap of claim 21, wherein the length is about 25 mm.

24. The actuator cap of claim 19 in combination with a container and a  
housing, the housing having a housing wall that tapers to a discharge opening wherein the  
discharge opening has a size larger than a radius of the container and wherein the outer  
25 peripheral surface is disposed in interfering relationship with the housing wall when the  
container and the actuator cap are disposed in the housing.

25. The combination of claim 24, wherein relative movement of the container and the housing along a longitudinal dimension of the container causes the outer peripheral surface to contact a surface of the housing wall, thereby displacing the valve actuating apparatus.

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26. The combination of claim 24, wherein the discharge opening has a cross sectional size of about 34 mm.

27. The actuator cap of claim 19, wherein the wall of the actuator cap is circumferential.

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28. The actuator cap of claim 19, wherein the actuator member comprises an arm.

29. The actuator cap of claim 28, comprising multiple actuator members extending transversely to the axial dimension and terminating at circumferentially separated outer peripheral surfaces.

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30. An actuator cap, comprising:

a main wall that extends generally along an axial dimension thereof and has a varying cross sectional size; and

5 an actuator member that is movable relative to the main wall wherein the actuator member has an outer peripheral surface extending laterally beyond the main wall at the axial location of the outer peripheral surface.

31. The actuator cap of claim 30, wherein the actuator member has a length between a center of the actuator cap and the outer peripheral surface between about 18 mm  
10 and about 33 mm.

32. The actuator cap of claim 30 in combination with a container, wherein the actuator member has a length between a center of the actuator cap and the outer peripheral surface and the length is greater than one-half of a radius of the container.

15 33. The combination of claim 32, wherein the outer peripheral surface extends laterally beyond a maximum radial dimension of the actuator cap.

20 34. The combination of claim 33, wherein the outer peripheral surface extends laterally beyond a maximum container radial dimension.

35. An actuator cap, comprising:
- a main wall having an axial dimension and tapering between first and second ends;
- and
- an actuator member extending transversely to the axial dimension and ending in an
- 5 outer peripheral surface, wherein the outer peripheral surface extends laterally beyond a portion of the main wall at the axial location of the outer peripheral surface and wherein the actuator member is disposed intermediate the first and second ends.

36. A method of dispensing, the method comprising the steps of:

selecting a container of product having a longitudinal dimension, a valve actuatable to dispense product generally parallel to the longitudinal dimension, and valve actuating apparatus extending from the valve in a direction transverse to the container's longitudinal dimension and terminating at an outer peripheral surface;

selecting a housing having a wall that reduces in cross sectional size to a discharge opening having a size larger than a radius of the container but the opening is small enough so that the wall provides an interfering relationship with the outer peripheral surface;

placing the container into the housing; and

providing a relative movement of the container and the housing in a direction along the longitudinal dimension such that the outer peripheral surface contacts a surface of the wall, thereby displacing the valve actuating apparatus to dispense product from the housing.

37. The method of claim 36, wherein the wall tapers to the discharge opening.

38. The method of claim 37, wherein the valve actuating apparatus has a length extending between a center of the valve and the outer peripheral surface and wherein the length is greater than one-half of the radius of the container.

39. The method of claim 38, wherein the length is between about 18 mm and about 33 mm.

40. The method of claim 37, wherein the valve is a female valve.

41. The method of claim 37, wherein the valve includes a valve stem.



42. A method of providing apparatus to an end user, the method comprising the steps of:

providing a container of product having a longitudinal dimension and valve actuating apparatus extending in a direction transverse to the longitudinal dimension and

5 terminating at an outer peripheral surface;

causing the container to be delivered to the end user; and

identifying the container and the valve actuating apparatus as suitable for  
placement within a housing that has a wall that tapers to a discharge opening having a size  
larger than a radius of the container but small enough to provide an interfering relationship  
10 between the wall and the valve actuating apparatus such that product can be dispensed by  
moving the container and the housing relative to each other in a direction along the  
longitudinal dimension to displace the valve actuating apparatus against a surface of the  
wall.

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